Commonwealth of Virginia

Chesapeake Bay TMDL Draft Phase II Watershed Implementation Plan

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EXECUTIVE SUMMARY

This draft Phase II Watershed Implementation Plan (WIP) has been developed by the Commonwealth of Virginia as part of the Chesapeake Bay Total Maximum Daily Load (TMDL) effort. As communicated by the Environmental Protection Agency (EPA) the purpose of the Phase II WIP is to:

- Divide the Bay TMDL allocations into local area targets
- Work with local partners to help them better understand their expected contribution to and responsibility for meeting the TMDL allocations
- Describe how partners are going to reduce loads delivered to the Bay
- Identify those resources, authorities, and other forms of assistance needed to implement actions that achieve TMDL allocations

This draft document is intended to describe the process Virginia is using for Phase II planning to meet these requirements. This planning process is ongoing and will culminate with the development of Virginia's final Phase II WIP. In an effort to maximize the time available for local governments to develop their needed information, this draft document does not contain the results of our local engagement efforts. The final Phase II WIP document will build on this framework to incorporate strategies, and resource needs to reduce loads delivered to the Bay.

This document supplements the strategies included in Virginia's Phase I WIP that was approved by EPA in December 29, 2010. Unless there are specific changes to the elements of the Phase I WIP, the strategies, and commitments in the December 2010 document remain in force.

Local Engagement and Plan Development Process

Virginia localities, through their administration of land use and water quality requirements, play a significant role in meeting the Chesapeake Bay TMDL. The state has engaged localities in the Phase II process through the sixteen Planning District Commissions (PDCs) in the Chesapeake Bay watershed. Meetings were held with the PDCs, local governments, and other stakeholders where state staff provided detailed Chesapeake Bay Watershed Model information for each of the local governments. The model information included local loads for nitrogen, phosphorous, and sediment, land use/land cover information for the localities, and best management practices (BMPs) for the 2009 progress run, and the 2025 Phase I WIP scenario. State staff also conveyed the following list of information needed from localities:

- A review of current BMP inventory as compared to the 2009 progress BMP
- An evaluation of the land use/land cover information included in the EPA Model and reporting of more accurate land cover data
- A review of the 2017 and 2025 BMP scenarios provided, and development of potential scenarios that achieve a similar level of implementation to that in the Phase I WIP
- Strategies to implement the BMP scenarios
- An identification of resources needed to implement the strategies and BMP scenarios

Working with PDCs the state has been able to communicate to the full range of local stakeholders their contribution to and responsibility for contributing to pollution reduction goals of the Chesapeake Bay WIP.

Local Targets

In accordance with EPA guidance for Phase II WIPs dated November 4, 2009 and March 30, 2011, Virginia developed a process to divide the Bay TMDL allocations into local area targets. City and county governments are the scale used for the local targets in Virginia. Due to unanticipated anomalies resulting from the revisions to the Watershed Model, EPA issued guidance clarification on October 5, 2011. The new guidance led to a modification in the state's approach, shifting to implementation-based local targets. These local implementation targets were derived from the Phase I WIP implementation levels. The BMP implementation targets were provided to localities in a spreadsheet pivot table and as a preloaded scenario in the Virginia Assessment and Scenario Tool (VAST). This information provided a starting point for localities to develop their own potential implementation scenarios as well as identification of the strategies and resources needed to achieve them.

Strategies to Meet Local Targets

Local strategies are still being developed by our local stakeholders. The time frame provided by EPA to convey the model information related to the revised EPA planning targets to the localities was far too short for the PDCs and localities to develop strategies, scrutinize them with local stakeholders and have them endorsed by their elected and appointed officials. These local and regional strategies will be combined with the state and federal level strategies for each of the pollution source sectors in the final Phase II WIP.

SECTION 1. INTRODUCTION

The Environmental Protection Agency (EPA) established the requirements for state Watershed Implementation Plans (WIP) as part of a larger Chesapeake Bay Total Maximum Daily Load (TMDL) accountability framework. The Phase II WIPs are an opportunity to refine the Phase I WIPs in collaboration with key local partners. Specifically, the purposes of the Phase II WIPs are to:

- **Facilitate implementation**
    - Divide the Bay TMDL allocations into local area targets to help partners better understand their contributions to meet the TMDL allocations
    - Describe how partners will assist in reducing loads delivered to the Bay
    - Identify those resources, authorities, and other forms of assistance needed to implement actions that achieve TMDL allocations
- **Propose refinements as necessary to the Bay TMDL allocations**
- **Provide an additional demonstration of reasonable assurance** that Bay TMDL allocations will be achieved and maintained, and the means by which any new or increased pollutant loadings will be offset

In order to fulfill this purpose, EPA has communicated expectations that Virginia's Phase II WIP should clearly identify:

- **Key local, state and federal partners** who will be involved in reducing nitrogen, phosphorus, and sediment loads to meet Bay TMDL allocations
- **How the state is working with its key partners** to
    - Raise awareness of the level of effort that is expected to meet Bay TMDL allocations
    - Define local partners' roles in implementing WIP strategies
    - Document the process by which local partners' contributed to the development and will contribute to the implementation of WIP
- **State strategies to help facilitate implementation** by local partners.
    - How and when strategies will be implemented to fill any **capacity gaps**
    - **Strategies could include but are not** limited to regulations, permits, technical assistance, and grant programs with specific provisions for local partners to reduce nitrogen, phosphorus, and sediment loads
- **Clear, quantitative goals** such as local area nitrogen, phosphorus, and sediment targets, BMP implementation levels, and/or programmatic milestones
- **How progress by local partners will be tracked, verified, and reported** for progress runs and the state's two-year milestones
- **How Virginia is working with federal agencies** to meet Bay TMDL allocations

In addition to these requirements, Virginia has identified the following objectives for the Phase II WIP:

- Focus on strategies that reduce and prevent nutrient and sediment losses to improve the quality of local waters and the Chesapeake Bay
- Convey the relationship between Chesapeake Bay restoration and protection of local waters
- Establish targets at the local government level as a tool for use by the local governments, Planning District Commissions (PDC), and Soil and Water Conservation Districts (SWCD) to quantify required conservation actions and account for progress toward achieving the targets and local water quality improvements
- Utilize local targets to facilitate engagement and partnership with local governments, PDCs, SWCDs, and other stakeholders in order to advance a better understanding of the local contribution to and responsibility for reducing pollutant loads
- Utilize the Phase II planning process as a mechanism to build upon existing practices and controls and determine the extent to which these existing practices can be enhanced to meet targets. The guiding principle reflected in this objective is building upon and enhancing existing regulations and programs rather than creating new ones
- Use the Phase II process to form a foundation upon which future milestones can be developed and progress tracked.

Development of a Phase II Watershed Implementation Plan confirms Virginia's commitment to the conservation and restoration of the Chesapeake Bay and Virginia's rivers. This draft document is intended to describe the process Virginia is using for Phase II planning. This planning process is ongoing and will culminate with the development of Virginia's final Phase II WIP. In an effort to maximize the time available for localities to develop the requested information, this draft document does not contain the results of our local engagement efforts. The time frame provided by EPA to convey the model information related to the revised EPA planning targets to the localities was far too short for the PDCs and localities to develop strategies, discuss them with local stakeholders and have them endorsed by their elected and appointed officials.

The final Phase II WIP document will build on this framework to incorporate local strategies and resource needs to reduce loads delivered to the Bay. This document supplements the strategies offered in Virginia's Phase I WIP that was approved by EPA in December, 2010. Unless there are specific changes to the elements of the Phase I WIP, the strategies and commitments in the December 29, 2010 document remain in force.

1.1 Stakeholder Advisory Group

The Virginia Secretary of Natural Resources established the Stakeholder Advisory Group (SAG). This group provides a forum for stakeholder input during the development of the Chesapeake Bay TMDL Phase II WIP.

The SAG includes representatives from PDCs, local governments, SWCDs, environmental organizations, home builders association, commercial real estate, agricultural interests, and consultants. Specific issues to be discussed by the committee include but are not limited to:

- Provide recommendations on strategies to successfully engage localities, PDCs, SWCDs, and other local and regional entities in the Phase II WIP process

- Provide comments and recommendations on issues raised by localities, PDCs, SWCDs, and other local and regional entities as they work toward identifying pollution reduction practices and strategies to be undertaken at the local level
- Identify potential resources, including funding and staffing opportunities, to assist local governments and other local entities in implementing identified practices
- Provide comments to the Secretary of Natural Resources on the draft Phase II WIP document

The SAG met three times in 2011. The SAG met on April 26, 2011, August 16, 2011, and November 7, 2011. Detailed information about these meetings is available online at http://www.dcr.virginia.gov/vabaytmdl/baytmdlsag2.shtml.

1.2 Websites and Technology Based Outreach

For Phase II the state's TMDL website is housed on the Virginia Department of Conservation and Recreation's (DCR) site. It can be found at http://www.dcr.virginia.gov/vabaytmdl/index.shtml. The site also has links to the EPA Bay TMDL site at http://www.epa.gov/chesapeakebaytmdl/.

A Virginia Bay TMDL listserv created during the development of the Phase I WIP to help inform stakeholders of nonpoint source related elements of the TMDL and WIP process was again used in Phase II. Members of the listserv include local elected officials, local government staff, SWCD directors, staff, and officers from municipal and county professional groups, agricultural producer groups, professional associations in the development and land-use communities, private consultants, large public landowners in the watershed, and more. The listserv has grown to more than 800 addresses.

1.3 Presentations to Interest Groups

During the development of the Phase II WIP, a number of interest groups requested presentations and opportunities to provide input to the agencies. Given the importance of localities and PDCs in the Phase II planning process, the state has worked hard to reach out to those statewide organizations that represent these entities. Since March, state representatives from the Secretary of Natural Resources Office, DCR senior staff, including the director, gave presentations on the Phase II WIP and the overall Chesapeake Bay TMDL to the following groups:

- Virginia Association of Planning District Commissions – Annual Meeting –March 2011
- Virginia Chapter of the American Society of Civil Engineers – March 2011
- Environment Virginia (an annual environmental summit, attended by local governments, conservation groups, agricultural groups, industry, military, and consultants held at the Virginia Military Institute) – April 2011
- Virginia Association of Counties – Special Workshop on the Chesapeake Bay TMDL Phase II – May 2011
- Virginia Municipal Stormwater Association - July 2011
- Virginia Association of Counties - Annual Meeting – November 2011

- Virginia Association of Soil and Water Conservation Districts – December 2011

1.4 Nutrient Credit Expansion

As called for in the Phase I WIP, the Secretary of Natural Resources assembled a broad-based study committee to examine the possible expansion of the use of nutrient credits in Virginia. The committee, over the course of 2011, examined the addition of source sectors to the program and technical and policy issues related to an expansion. As of this date, the recommendations of the committee are being prepared for the Secretary's review and possible action by the General Assembly. A complete summary of the committee report and any actions by the General Assembly will be incorporated into the final Phase II WIP.

SECTION 2. PHASE II LOCAL ENGAGEMENT

2.1 Introduction

Within Virginia's Chesapeake Bay watershed, local governments have authority to manage the use and development of land and administer many of the Commonwealth's environmental regulations including the Erosion and Sediment Control Law, the Chesapeake Bay Preservation Act, and other requirements. These jurisdictions represent the greatest opportunity to implement strategies to meet the WIP. Additionally, many of these localities are also permittees for federal requirements such as the Municipal Separate Storm Sewer System (MS4) permits, and Wastewater Treatment plants. Although Virginia localities, through their administration of land use and water quality requirements, will play a significant role in meeting the Chesapeake Bay TMDL, the state has chosen to engage the localities on the Phase II process through the sixteen Planning District Commissions in the Chesapeake Bay watershed. The PDCs were established by § 15.2 of the Code of Virginia "to encourage and facilitate local government cooperation and state-local cooperation in addressing, on a regional basis, problems of greater than local significance. The cooperation resulting from this chapter is intended to facilitate the recognition and analysis of regional opportunities and take account of regional influences in planning and implementing public policies and services". Further, the PDCs are comprised of the individual localities within the geographic area covered by the PDC and have a long tradition in Virginia of promoting and advancing solutions that manage complex and regional problems including transportation planning. Using this vehicle for engagement, Virginia has been able to communicate to the local governments, PDCs, SWCDs, and local representatives of federal facilities their contribution to and responsibility for addressing the Chesapeake Bay TMDL.

2.2 Key Local, State and Federal Partners

The key partners in the implementation of pollution reduction strategies to meet the Chesapeake Bay TMDL include local governments, Planning District Commissions, Soil and Water Conservation Districts and federal facilities. The localities are authorized by the Code of Virginia to develop local ordinances and programs to manage existing and future land uses and activities to protect and improve the quality of their communities. The Soil and Water Conservation Districts are authorized by state law to provide agricultural BMP cost share assistance to farmers, assist local governments with the administration of the state Erosion and Sediment Control law, provide assistance to farmers in conservation planning consistent with the federal Farm Bill, and coordinate and deliver services that support implementation of county ordinances including

agricultural provisions of the Chesapeake Bay Preservation Act and assisting with the implementation of Virginia's Agricultural Stewardship Act.

2.3 State Strategy for Local Engagement

In February of 2011, Virginia convened a Chesapeake Bay Phase II WIP project team made up of various key program staff from DCR and senior staff from the Department of Environmental Quality (DEQ), Department of Forestry, Department of Transportation, Department of Agriculture and Consumer Services and Department of Health. This team developed a local engagement process that incorporated the use of Virginia's PDCs, established local engagement teams that were assigned to each of the PDCs and involved a three staged effort to engage localities, the SWCDs, federal partners and other stakeholders in the Phase II development process.

The first stage involved meetings between the Assistant Secretary of Natural Resources for Chesapeake Bay Restoration and the PDCs in the Bay watershed to provide a high level overview of the Chesapeake Bay TMDL and the Watershed Implementation Planning process. These meetings occurred from March through May of 2011 and were attended by local elected and appointed officials who are members of the PDC. These meetings began the process of informing local elected officials of the Chesapeake Bay TMDL, the components of the Phase I WIP and the potential role of local stakeholders during the Phase II process. During these initial meetings the PDCs and their member localities were asked if they were willing to participate in the Phase II planning process.

During the second stage of the engagement process, DCR local engagement teams conducted follow-up meetings with the PDCs. During these meetings staff provided more detail on the Phase II WIP planning process and began working with the PDCs to determine the extent to which they were willing to participate in this process.

The third step in the process included data delivery meetings with the PDCs and local governments. At these meetings, DCR staff provided detailed Chesapeake Bay Watershed Model information (v5.3.0) for each of the local governments within the PDC area. The model information included local loads for nitrogen, phosphorous, and sediment, land use/land cover information for the localities, and BMPs for the 2009 progress run and the 2025 Phase I WIP scenario. During this process, DCR staff provided detailed explanations of the model information so that staff from the PDCs and the localities fully understood the pollutant loadings, land uses and existing BMPs currently represented in the model for their jurisdictions.

Another key element of the data delivery meetings was to convey to the localities and PDCs the information the state needed from them in support of the Phase II WIP document. The following list is the information the state asked that the localities provide:

- A review of current local BMP inventory as compared to the EPA model BMP information – this information will be used to update implementation progress data in the Bay model
- An evaluation of the land use/land cover information included in the EPA model and provision of more accurate land cover information – this will be of tremendous assistance in ensuring that Bay model revisions made in the future will more accurately reflect local land use information

- A review the 2017 and 2025 BMP scenarios provided and development of preferred local scenarios that meet the reduction goals – identified local BMP scenarios will be aggregated and incorporated into the Phase II WIP
- Strategies to implement the preferred BMP scenarios – strategies will be aggregated and used in development of Virginia's Phase II WIP
- An identification of resources needed to implement the strategies and BMP scenarios – this information will be used in drafting Virginia's Phase II WIP and developing of cost estimates for the implementation of the WIP

The data delivery meetings occurred from mid-May through the end of June 2011. As a follow-up to the meetings with PDCs and local governments, and at the request of PDC and local government staff, DCR sent letters to the local governments in Virginia's Bay watershed reiterating the information that was needed from the local governments to assist in the development of the Phase II WIP.

As part of this outreach process, local engagement team members continued to meet with the PDCs and local government to respond to questions and provide assistance as they compiled the information the state requested related to the Phase II WIP.

To augment the engagement process identified above, the state worked with the Choose Clean Water network, a consortium of conservation organizations, to conduct a series of workshops across the Bay watershed. These workshops took place from June through October of 2011 and provided local governments and PDC staff specific technical assistance on how to analyze the Bay model information for their localities or PDC areas and update that information with more accurate local information on land use/land cover and local BMPs.

Another important series of meetings with local stakeholders came with EPA's release of revised model data and the development of the Virginia Assessment and Scenario Tool (VAST). These workshops provided an opportunity for gaining hands-on experience with VAST. The workshops included a presentation of the revised (v5.3.2) Watershed Model output, explanation of the changes to the requested deliverables resulting from the new model's anomalies, and demonstration of the VAST as a tool for developing and reporting the deliverables.

As a result of this engagement effort, PDCs, along with their partner local governments, now better understand the pollutant loadings from the various source sectors, the pollutant reductions needed in order to meet the Bay TMDL and the level of BMP implementation needed within their areas as identified by the Bay model. This information has been analyzed by PDCs and the localities. In response; these local entities are now in the process of updating land use/land cover and BMP information, and identifying strategies to address the Bay TMDL. Data from localities will be aggregated to an appropriate scale for inclusion in Virginia's final Phase II WIP.

2.4 State Strategies In Support of Local Planning

2.4.1 Virginia Assessment and Scenario Tool

As described above, the state has provided significant technical assistance to PDCs and local governments as they update the Bay watershed model information and identify strategies to address the Bay TMDL. To facilitate this process, the state deployed the Virginia Assessment

and Scenario Tool (VAST) on September 29, 2011 and has provided training on the use of this tool to PDCs, local governments, SWCDs, consultants and other stakeholders. The VAST tool provides the PDCs and/or local governments with a user friendly mechanism to submit updated land use/land cover and BMP information and evaluate a variety of BMP scenarios to meet the WIP I levels of implementation.

2.4.2 Technical and Financial Assistance

In addition to the direct assistance from state staff, PDCs and local governments have been offered several sources of technical and financial assistance for the Phase II process. The state has offered technical assistance through Tetra Tech and the Chesapeake Bay Program Circuit Rider. Both of these options offer hands-on technical assistance in identifying and reviewing Bay model information at the local level, identifying preferred BMP scenarios to address the TMDL, as well as assistance with developing strategies to implement those scenarios. Several PDCs have used these technical resources. In addition to technical assistance programs, the state provided financial assistance for Phase II planning to PDCs, local governments, Soil and Water Conservation Districts and other stakeholders in excess of 200,000 dollars.

2.5 Federal Lands Pollution Reduction Strategies

Federal facilities are important partners in the Phase II planning process and particularly for the development of the final Phase II WIP document. Federal partners participated in many of the PDC meetings at which DCR staff presented the Chesapeake Bay Watershed Model information. Many have begun actively engaging with state and local staff on ways the federal facilities' actions toward meeting the TMDL goals could be coordinated with the strategies of the local governments and PDCs.

Through the use of the VAST discussed above, stakeholders are aware of the contribution by federal facilities and lands to local pollutant loadings and levels of BMP implementation. The most recent version of the Bay model shows federal facilities in the aggregate and does not show specific facilities. Furthermore, the land use associated with the federal holdings is represented in the model as proportional to the land use in the surrounding county. Going forward, as the localities and PDCs begin to identify preferred BMPs, they will need to coordinate with their federal facility partners to obtain updated and detailed information regarding land use and existing levels of BMP implementation on the federal facilities within their jurisdictions.

A key strategy for working with federal lands and facilities is to encourage all the Virginia facility representatives to engage with the local governments in which they are located and to provide information relating pollutant loadings, levels of BMP implementation and land use information for their facility. They will be asked to work with their partner localities and PDCs as those entities develop their BMP scenarios. The desired result is for the federal facilities and their local partners to understand the extent to which each entity can contribute to the total level of BMP implementation.

EPA guidance for federal lands and facilities' role in the Phase II process (published April 29, 2011) states that "federal agencies with property in the watershed will provide leadership and will work with the Bay jurisdictions in the development of their Watershed Implementation Plans." In doing so, federal agencies are expected to work with the Bay jurisdictions to:

- Identify federal lands and facilities
- Estimate nitrogen, phosphorus and sediment loads from those federal lands and facilities
- Identify potential pollutant reductions from point and nonpoint sources associated with federal lands and facilities by providing information on property boundaries, land cover, land-use, and implementation of management practices
- Commit to actions, programs, policies, and resources necessary through 2017 and 2025 to reduce nitrogen, phosphorus, and sediment pollutant loads associated with federal lands and facilities by specific dates
- Provide information on those actions, programs, policies, and resources that are or will be necessary to achieve target load reductions for federal lands and facilities determined by the jurisdictions in their Phase II WIPs subsequent to collaboration with the federal agencies

To advance this strategy, DCR staff will convene a meeting with representatives of the federal facilities in December 2011 to discuss their overall participation in the development of the final Phase II WIP document, ensure all federal facility representatives understand EPA's expectations for their participation in the process and explain the state's expectation that each facility representative coordinate with the locality in which the facility is located. At this meeting, staff will discuss specific actions the federal facility partners should undertake to meet with localities and to begin compiling the information they are to provide to the state for incorporation into the final Phase II WIP.

Once the federal partners clearly understand their role in the Phase II planning process, DCR staff will, through the local engagement teams, further clarify with the PDCs and local governments the need to coordinate their Phase II strategy development with the federal facilities within their jurisdictions. Finally, federal partners will be asked to submit their strategies and BMP levels of implementation to the state for incorporation into Section 10 of the final Phase II WIP.

2.6 Implementation Tracking, Verification, and Progress Reporting

Through the local engagement process described above and the deployment of the VAST, PDCs and localities have begun to develop mechanisms to aggregate and track their urban and agricultural BMPs. These tracking systems, which are in a format that will enable them to be incorporated into the Chesapeake Bay Watershed model, will continue to be utilized to track and report progress on BMP implementation.

Current regulatory and funding programs will be used to verify the existence of BMPs. Through the Chesapeake Bay Preservation Act, (the "Bay Act"), local governments in Tidewater Virginia are required to ensure that urban BMP practices are maintained in a manner that ensures the BMPs continue to function as they were designed. Further, the Bay Act regulations require local governments to annually report continued compliance with all provisions of the act, including the stormwater management BMP maintenance provisions. Urban BMP maintenance is also a provision of the recently adopted stormwater management regulations. These two key regulatory mechanisms will ensure the verification, maintenance and tracking of BMPs.

A Stormwater Management Enterprise Website is being developed as a management tool for the new stormwater management regulations. When the regulations are adopted and implemented, the enterprise website will track project information including: location, size of site, disturbed area, BMPs and area of treatment, date of plan reviews and approvals, inspection and enforcement documentation, permit issuance date, project termination and fees paid. The implementation of the website will allow local entry of data into the tracking database and allow DCR to consolidate locality data for submission to EPA.

SECTION 3. LOCAL TARGETS

This section describes the process for developing the local targets and implementation goals for localities in Virginia's bay watershed. In accordance with EPA guidance for Phase II WIPs dated November 4, 2009 and March 30, 2011, Virginia developed a process to divide the Bay TMDL allocations into local area targets. These local area targets are not finer scale waste load and load allocations in the Bay TMDL but when added together, would equal the relevant state-basin TMDL allocation caps. The local area targets are intended to help partners better understand their contributions to meet the WIP. When choosing the appropriate scale for local area targets Virginia followed the EPA guidance and considered:

- Scale that would facilitate engagement of local stakeholders
- Scale at which programs or actions identified are delivered
- Scale at which partners could be held accountable for meeting local targets
- Scale at which the Chesapeake Bay models can track loads

Given these considerations, it was determined that the scale of local targets in Virginia would be that of city and county governments.

3.1 Process for Developing Local Targets

In May 2011, using EPA model data, the state gave the localities in Virginia's bay watershed goal loads and reduction goals for nitrogen, phosphorus, and sediment. EPA's v5.3.0. watershed model edge-of-stream loads for Virginia's Phase I Watershed Implementation Plan were the basis for subdividing the Bay TMDL allocations into local goal loads. The 2009 Progress edge-of-stream loads were then compared to the local goal loads to determine the reduction goals. In addition to the goal loads and reduction goals, each locality was provided with detailed model data on land use and BMPs in their jurisdiction. While the data was provided with more details on the sources and watershed segments within the locality, the sum of all of the nonpoint source loads constituted the local goals. Combining all source sectors and segmentsheds in a single goal is intended to give localities maximum flexibility in managing their pollution reductions. When this data was provided to localities, they were informed that revisions to the Chesapeake Bay watershed model were pending and that these changes would result in some change to their local goals. EPA's Chesapeake Bay Program Office estimated the potential change in loads to be around five percent.

As EPA was completing the v5.3.2 model revisions, analysis of the model's inputs and outputs revealed some serious deficiencies in the model's simulation of agricultural nutrient management as well as high levels of variability in loads when evaluated at the local scale. These anomalies in

the model caused significant changes in the local target loads, well in excess of the EPA's projected five percent change.

Due to the unanticipated variability in local target loads, and the anomalies resulting from the revisions to the watershed model, EPA issued guidance clarification on October 5, 2011. The guidance suggested alternative approaches to developing local targets, as well as changing the scale at which EPA would expect inputs. These circumstances led to a modification in the state's approach for Phase II planning. Instead of asking local governments to develop implementation scenarios to meet model-generated local target loads, the state shifted the focus to an implementation based target. These local implementation targets were derived from the Phase I WIP BMP levels distributed to the local government scale based on the watershed models input files. These BMP implementation targets were provided to local governments in a spreadsheet pivot table and as a preloaded scenario in the VAST.

3.2 Target Loads for Point Sources

The point source waste load allocations (WLA) are contained in Appendix Q of the Chesapeake Bay TMDL. The WLAs appear in the reissued General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia [9 VAC 25 - 820] that will become effective on January 1, 2012. Because the waste load allocations for wastewater dischargers are contained in the permit, no local targets were developed for the point source sector for this version of the WIP.

SECTION 4. WASTEWATER

4.1 Phase II Strategies

4.1.1 Impacts to Phase I Strategies

4.1.2 Phase II Local Strategies

TMDL waste load allocation requirements have been established by the reissued Chesapeake Bay Watershed General Permit that will become effective on January 1, 2012. Therefore, local strategies for the wastewater sector are not anticipated to be part of the Phase II WIP. Should any local strategies regarding wastewater be submitted, they will be summarized in this section of Virginia's final Phase II WIP.

4.2 Contingencies

The Department of Environmental Quality's Compliance and Enforcement Program for wastewater permit requirements is the mechanism that will be employed to ensure timely implementation to achieve waste load allocations.

4.3 Tracking and Reporting Protocols

In general, Bay wastewater dischargers are required to track and report under their discharge permits, both the Watershed General Permit for annual loads and individual permits for concentration-based nutrient limits.

The specifics of current annual reporting requirements for dischargers under the Watershed General Permit are:

On or before February 1 each year, the permittee shall either individually or through the Virginia Nutrient Credit Exchange Association file a report with DEQ. The report shall identify:

- The annual mass load of total nitrogen and the annual mass load of total phosphorus discharged by each of its permitted facilities during the previous calendar year
- The delivered total nitrogen load and delivered total phosphorus load discharged by each of its permitted facilities during the previous year
- The number of total nitrogen and total phosphorus credits for the previous calendar year to be acquired or eligible for exchange by the permittee

Dischargers under the Watershed General Permit are also required to annually submit to DEQ, either individually or through the Virginia Nutrient Credit Exchange Association, an update to their compliance plans for approval. The compliance plans must contain sufficient information to document a plan for the facility to achieve and maintain compliance with applicable total nitrogen and total phosphorus waste load allocations.

As part of the Nutrient Credit Exchange Program, DEQ is required to report results of wastewater nutrient monitoring and credit availability by April 1 of each year for the prior year's annual loads. Then, on or before July 1 of each year, DEQ must publish notice of all nutrient credit exchanges and purchases for the previous calendar year and make all documents relating to the exchanges available to any person requesting them. Both of these reports are made available on DEQ's nutrient trading webpage http://www.deq.virginia.gov/vpdes/nutrienttrade.html.

SECTION 5. AGRICULTURE

5.1 Phase II Strategies

5.1.1 Impacts to Phase I Strategies

- Securing sufficient funding to meet agricultural targets: ensure sufficient funding and staff to reach agricultural reduction targets.
    - DCR will supplement the current year cost-share funding by adding approximately $15.5 million for the 47 SWCD's. This additional funding will be allocated by January 2012. Three million dollars will be added for livestock exclusion, two million dollars for the local agricultural implementation of TMDLs, two million dollars for animal waste practices and the remainder to the general fund for agricultural BMP implementation. Technical assistance to SWCDs is also included. Furthermore, increasing the cost-share funding percentage for certain practices named in the Phase I WIP such as livestock exclusion is being considered for next year.
    - The Department of Agriculture and Consumer Services (VDACS) has filled two additional full-time positions to assist the Commissioner with the implementation of the Agricultural Stewardship Act (ASA) Program. These positions will provide

faster responses to water quality complaints concerning agricultural activities, allow for an increased number of follow-up site visits to ensure stewardship measures are maintained, and provide more education and outreach opportunities to the agricultural community.

- Following through on Confined Animal Feeding Operations (CAFO) and Animal Feeding Operations (AFO) plan commitments, including assistance with submitting Virginia Pollution Abatement (VPA) and Virginia Pollutant Discharge Elimination System (VPDES) permits; compliance assurance activities; and a DEQ/VDACS Memorandum of Agreement (MOA)
    - VDACS and DEQ are in the final stages of completing a strategy to manage water quality issues on small, unpermitted animal feeding operations (AFOs). The goal of this strategy is to better utilize the existing ASA program and the DEQ Animal Waste Permit (AWP) program to identify, evaluate and address concerns on these unpermitted sites. This strategy will be carried out through the development and implementation of a MOA between the agencies that is expected to be completed by December 31, 2012.
- Defining and implementing resource management plans: Develop and implement resource management plans (RMPs). Virginia will be developing RMP regulations that will determine the criteria for RMPs. The regulations will provide for mechanisms to ensure that the practices implemented through these plans can be verified.
    - The resource management plan regulatory process has been moving forward in the Commonwealth. A regulatory advisory panel was formed and two meetings have been held, the most recent on November 9, 2011. Subcommittees on assessment, plan development and compliance have also been formed and have met twice. Accountability and alignment with the Phase I WIP are primary concerns as this regulatory process moves forward.

5.1.2 Phase II Local Strategies

The agricultural sector information was included in the outreach package to the planning districts and local governments. The information included the model's land use acres, the number of agricultural BMPs reported for 2009 and the level of BMP implementation needed according to the Phase I WIP by 2025 in the localities. The intention is for the localities, potentially working with SWCDs, to verify the data, identify any errors, and report locally preferred implementation scenarios, strategies and resource needs.

Local strategies will be developed as part of the ongoing Phase II planning process. Strategies submitted by local stakeholders will be summarized in this section of Virginia's final Phase II WIP.

5.2 Contingencies

It is anticipated that the strategies outlined in Virginia's Phase I WIP, particularly the development of Resource Management Plans and tracking of voluntarily installed BMPs, combined with a continued commitment to expanding the Agriculture Cost-Share Program will provide significant opportunities toward meeting the load allocations for the agricultural sector.

If adequate progress is not achieved using those approaches, additional measures may be considered.

To encompass more area within the Chesapeake Bay Preservation Act, the state may encourage more Bay Act localities to adopt jurisdiction wide Chesapeake Bay Preservation Areas. Doing so would apply the Bay Act's agricultural provisions to a greater amount of area within those localities currently subject to the Bay Act. These provisions mandate that Bay Act local governments require the conduct of Soil and Water Conservation Assessments to determine if existing agricultural BMPs are adequate in controlling soil erosion and reducing nutrients. Should these assessments determine the need for additional or new agricultural practices such as nutrient management planning, then such plans must be developed and reviewed by the local Soil and Water Conservation District.

In addition, the legislature could consider amending §58.1-3231 to require certain best management practices to be used on land enrolled in local use value assessment and taxation programs. Land used for agriculture, horticulture or forestry purposes may be taxed using a special assessment based on current use rather than market value if the local governing body has adopted an ordinance in accordance with §58.1-3230 et. seq. or if such land lies within an agricultural district, forestal district, or an agricultural and forestal district established under §15.2-4300 et. seq. The value of this alternative real estate taxation is significant and almost all counties in the Chesapeake Bay watershed offer this reduced tax option on significant acreage. A condition that implementation of practices including livestock stream exclusion, nutrient management plans, and soil conservation plans be required by 2017 for any lands eligible for such local use value assessment and taxation programs could be considered. This would provide an incentive to manage such lands in a manner protective of water quality.

5.3 Tracking and Reporting Protocols

Currently, agricultural BMPs are reported through the Agriculture Cost-Share Program Tracking Database. Data comes directly from the SWCDs to quantify conservation practices implemented. This information is ready for inclusion in the National Environmental Information Exchange Network (NEIEN).

Voluntary practices need to be tracked and reported. Six pilot SWCDs have been engaged to begin the voluntary practice tracking process. They are developing individual voluntary tracking protocols and will be gathering voluntary BMP data to include in the existing tracking database. As the pilot phase ends in June 2012, the six SWCDs will present their findings to DCR and other stakeholders. From these pilot work efforts, DCR will choose the most appropriate path for all 47 SWCDs to implement. Full implementation is schedule beginning July 1, 2012.

Additionally, nutrient management plan acres need to be included in NEIEN and work is underway to add data in a digital format. DEQ currently tracks poultry litter transport between counties in Virginia. Whether through increased cooperation with DCR reporting or the direct reporting by DEQ to NEIEN, the reporting of transport within county boundaries and the reporting of biosolids applications to agricultural fields needs to be included in the NEIEN reporting. Water Quality Improvement Fund (WQIF) projects are tracked and placed in the Agricultural Cost-Share Program Tracking Database, however this data is not added consistently on a quarterly basis like the cost share practices.

SECTION 6. URBAN/SUBURBAN STORMWATER

6.1 Updated Phase I Strategies

6.1.1 Impacts to Phase I Strategies

The 2010 Chesapeake Bay TMDL improperly established individual waste load allocations for large Municipal Separate Storm Sewer Systems (MS4) in Virginia. This was not done for any other Bay jurisdiction. The individual allocations also resulted in no allocation being made for the small MS4s that fall within a larger MS4's boundaries. These individual allocations should be removed in the 2011 revision to the TMDL and replaced with aggregate waste load allocations for all MS4s in a segmentshed. This change will rectify the inequity issue of Virginia's large MS4s being treated differently than those in other partner jurisdictions as well as resolve the issue of zero allocation for those small MS4s. This change is supported by the MS4 strategies below.

Statewide Stormwater Management Regulations

As reported in the Phase I WIP, stormwater management for development and redevelopment is currently being undertaken in Virginia through: MS4s, Erosion and Sediment Control (E&S), and Virginia Stormwater Management Program (VSMP) permits, as well as the stormwater provisions of the Chesapeake Bay Preservation Act. It was also reported that new statewide stormwater management regulations were in the process of being developed and that, when implemented, should address the sediment and nutrient loads and stormwater quantity issues related to new development and redevelopment over the entire Chesapeake Bay watershed. The new regulations will impact new and redeveloped land disturbing projects equal to or greater than one acre, except in areas covered by the Chesapeake Bay Preservation Act, where the minimum disturbance is greater than or equal to 2,500 square feet. For redevelopment projects of certain acreage, 20 percent required phosphorus and associated nitrogen and sediment reduction is incorporated within the Virginia Stormwater Management Regulations.

Update

The Virginia Stormwater Management Regulations were approved by the Governor and became effective on September 13, 2011. Although they are now effective, the date by which local governments are expected to implement the regulations is July of 2014, to coincide with the reissuance of the construction general permit. Local governments are being encouraged to begin reviewing their local codes and processes to ensure a smooth transition to the new requirements. Local programs must be approved by the Virginia Soil and Water Conservation Board by July of 2014. Programs need to be developed and approved by local boards and councils well in advance of that date. These new regulations are mandatory for 92 localities that are MS4s and those that are subject to the Chesapeake Bay Preservation Act. However, those localities outside the Bay Act area and not MS4s have the option to "opt in" to the stormwater management program. The state has embarked on a major outreach effort to promote the voluntary adoption of the stormwater management regulations by these voluntary localities.

Key provisions of the approved regulations include:

- A revised phosphorous limit of 0.41 lbs/acre/year for new development
- 20% reduction of phosphorous on redevelopment greater than an acre

- 10% reduction of phosphorous on redevelopment less than an acre
- Provisions for stream channel and flood protection
- Shift responsibility for compliance with Virginia Stormwater Management Permit criteria on private construction sites from the State to local governments
- Identification of who is responsible for plan review and approval, inspection and enforcement at the local government
- Inspection and monitoring of construction activities for compliance with local ordinances, as well as inspections for compliance with the general permit conditions
- Requirements for long term inspection of permanent stormwater facilities
- Collection, distribution and expenditure of fees
- Reporting and record keeping requirements.

Existing regulatory authority allows for localities to establish stormwater utility fees, service districts, or pro-rata fee programs to address sediment and nutrient loads associated with stormwater runoff pursuant to Section 15.2 et. seq. of the Code of Virginia. The fees, if collected, can be used to finance stormwater management projects to address the quality and quantity of stormwater runoff.

House Bill 1221 enacted by the 2010 Virginia General Assembly allows for loans to be made to a local government from the Virginia Water Facilities Revolving Loan Fund for the purpose of constructing facilities or structures or implementing other best management practices that reduce or prevent pollution of state waters caused by stormwater runoff from impervious surfaces.

Section 10.1-603.7 of the Stormwater Management Act authorizes localities to adopt a more stringent stormwater management ordinance to ensure compliance with the act and attendant regulations. This section also provides guidance under which conditions a locality may adopt a more stringent ordinance. Localities have the opportunity to develop stricter ordinances requiring the installation of BMPs in existing urban areas. In addition, localities also have the ability to adopt more stringent criteria for water quality and quantity control to meet the loads and waste loads for a segmentshed.

MS4 Permits

The Commonwealth will utilize MS4 permits to ensure BMP implementation on existing developed lands achieves nutrient and sediment reductions equivalent to Level 2 (L2) scoping run reductions by 2025 for state and local MS4 operators. Level 2 implementation equates to an average reduction of nine percent of nitrogen loads, 16 percent of phosphorus loads, and 20 percent of sediment loads from impervious regulated acres and six percent of nitrogen loads, 7.25 percent of phosphorus loads, and 8.75 percent sediment loads beyond 2009 progress loads for pervious regulated acreage. These reductions are beyond urban nutrient management reductions for pervious regulated acreage.

MS4 permits will provide flexibility in implementation of the specific management technologies employed to meet the required reductions, while stipulating standards and/or objectives. MS4 operators will be able to adjust the levels of reduction between pervious and impervious land uses within their service area, provided the total pollutant load reduction is met. For example, an

MS4 could implement a five percent nitrogen load reduction on impervious land uses by implementing a reduction strategy sufficiently greater than six percent nitrogen load reduction on pervious land uses provided the total loads from both land uses are met. In addition, as a means to meet the pollutant reductions, it is anticipated that some permittees may consider incentives such as the Water Quality Improvement Fund and tax credits to encourage additional reductions beyond the L2 Level.

The Commonwealth will utilize enforceable MS4 permit language requiring MS4 operators to develop, implement and maintain Chesapeake Bay Watershed Action Plans consistent with the WIP. MS4 operators will be given three full permit cycles (15 years) to implement the necessary reductions to meet the L2 implementation levels for non-federal MS4s and Level 3 (L3) implementation levels for federal MS4s. Baseline efforts for all MS4s will be based upon 2009 progress loads. The baseline effort will be continued with an expectation of an additional five percent reduction of loads for existing developed lands to be met by the end of the first permit cycle. In addition, MS4 operators will be required to implement urban nutrient management plans on all lands owned and operated by the MS4 operator during the first five-year permit cycle. MS4 operators will also be required to implement the revised stormwater management regulations for new and redevelopment projects on July 1, 2014.

During the first permit cycle, MS4 operators will develop a phased Chesapeake Bay Watershed Action Plan. The plan will include a review of the baseline program and include an outline of the means and methods that will be utilized to meet the L2 level for state and local MS4s and L3 for federal MS4s. The MS4 operator will also review its authorities, adopt and modify the necessary ordinances, and enhance its resources in order to implement the necessary reductions (e.g., develop design protocols, operation and maintenance programs, site plan review criteria, inspection standards, and tracking systems). As a part of reapplication for the second cycle of permit coverage, the MS4 operator will provide a schedule of implementation of the means and methods to implement sufficient reductions to reach 35 percent of the L2 reductions for state and local MS4s and L3 for federal MS4s. As a part of reapplication for the third cycle of permit coverage, the MS4 operator will provide a schedule of implementation of the means and methods to implement sufficient reductions to reach the remaining L2 reductions for state and local MS4s and L3 for federal MS4s by the end of the third permit cycle.

The Commonwealth will utilize MS4 permits to ensure BMP implementation on existing developed regulated federal lands achieves nutrient and sediment reductions equivalent to Level 3 scoping run reductions by 2025. Level 3 implementation equates to an average reduction of 18 percent of nitrogen loads, 32 percent of phosphorus loads and 40 percent of sediment loads from impervious regulated acres and 12 percent of nitrogen loads, 14.50 percent of phosphorus loads and 17.5 percent of sediment loads for pervious regulated acreage. These reductions are beyond urban nutrient management reductions for pervious regulated acreage.

Urban Nutrient Management

As reported in the Phase I WIP, urban nutrient management represents a cost-effective approach to reduce nutrient loss from pervious urban lands. Virginia intends to maximize the implementation of urban nutrient management through a combination of actions. Implementation of nutrient management plans is already required by the Code of Virginia on all state owned lands receiving nutrients.

During the 2010 Virginia General Assembly session House Bill HB 1831 was adopted. This milestone legislation instituted the following requirements into Virginia law:

- Prohibits the sale, distribution and use of lawn maintenance fertilizer containing phosphorus beginning December 31, 2013
- Prohibits the sale of any deicing agent containing urea, nitrogen, or phosphorus intended for application on parking lots, roadways, and sidewalks, or other paved surfaces as of December 31, 2013
- Requires the Board of Agriculture and Consumer Services to establish reporting requirements for contractor-applicators and licensees who apply lawn fertilizer to more than 100 acres of nonagricultural lands annually. The report will include the total acreage or square footage and the location of where the fertilizer is being applied
- Requires golf courses to implement nutrient management plans by July 1, 2017
- Authorizes VDACS to develop consumer information and recommended best practices for the application of lawn fertilizer.

This legislation advances many of the strategies identified in the Phase I WIP to reduce the nutrients generated through the use of fertilizer in the urban setting.

6.1.2 Phase II Local Strategies

The urban sector information was included in the outreach package to the planning districts and local governments. The information included the model's land use acres, the number of urban BMPs reported for 2009, and the level of BMP implementation needed according to the Phase I WIP by 2025 in the localities. The intention is for the localities to verify the data, identify any errors, and report locally preferred implementation scenarios, strategies, and resource needs.

Local strategies will be developed as part of the ongoing Phase II planning process. Strategies submitted by local stakeholders will be summarized in this section of Virginia's final Phase II WIP.

6.2 Contingencies

Collectively, the stormwater management programs and actions set forth in this implementation plan represent a significant step forward in managing urban sources of nutrients and sediments. Additional actions that could be employed if allocations are not met could include, but are not limited to the following:

- Consider reducing allowable post development loads further on new development through stormwater management requirements that call for post construction stormwater to preserve and restore site hydrology and implement BMPs necessary to control the discharge of pollutants in stormwater to the maximum extent practicable and any more stringent requirements necessary to meet water quality standards
- Consider requiring new post development loads to be lower than the transferred load allocation from the average load allocations of the collection of previous land uses prior to development

- Consider establishing impervious cover limits or open space requirements that preserve and restore site hydrology and implement BMPs necessary to control the discharge of pollutants in stormwater to a greater extent
- Establish requirements for enhanced vegetation and native plantings within required open space and pervious areas to boost function of pervious areas.

6.3 Tracking and Reporting Protocols

One of the missing elements in capturing this sector's contribution has been inconsistent or nonexistent reporting of installed practices. A Stormwater Management Enterprise Website is being developed as a management tool for the new stormwater management regulations. When the regulations are adopted and implemented, the enterprise website will track project information including: location, size of site, disturbed area, BMPs and area of treatment, date of plan reviews and approvals, inspection and enforcement documentation, permit issuance date, project termination and fees paid. The website will allow local entry of data into the tracking database and allow DCR to consolidate locality data for submission to EPA.

DCR is developing the enterprise website to digitally track and report all urban and suburban BMPs, though funding is needed to launch the website for intended users. Data collected through this website will be provided in a digital format that can be uploaded to NEIN. The MS4 localities must report installed BMPs as a condition of their permit and this direct input from localities could greatly improve the tracking of installed BMPs.

SECTION 7. ONSITE WASTEWATER

7.1 Phase II Strategies

7.1.1 Impacts to Phase I Strategies

The Phase I WIP focused on attempts to reduce the rate of growth in this sector through regulatory actions and proposed to offset some loads through an expansion of the Nutrient Credit Exchange Program. The specific strategies as described in the WIP are presented below with updates on the implementation of those strategies.

- Implement amendments to Virginia Department of Health regulations for alternative systems. The proposed amendments require a minimum 50 percent reduction in delivered N for all new small alternative onsite systems in the Chesapeake Bay watershed resulting in an effective delivered load to the edge-of-project boundary of 4.5 lbs TN/person/year. All large alternative onsite systems will demonstrate compliance with <3 mg/l TN at the project boundary.
    - The amendments described above entered a final adoption period on November 7, 2011, and should take effect on December 7, 2011. Within those amendments are nitrogen reduction requirements for alternative onsite sewage systems. The regulatory section to comply with the nitrogen reduction requirements has a delayed implementation date of two years from the effective date of the amendments. Given the amendments anticipated effective date of December 7, 2011, the nitrogen requirements will be effective December 7, 2013.

  - In the interim, VDH will develop guidance documents for implementing the nitrogen reduction requirements in the regulations.
  - These amendments also require operation and maintenance of alternative systems. That requirement is effective immediately upon adoption of the amendments and is retroactive to existing alternative systems as well.
  - VDH is developing training to ensure that agency staff can implement the new operation, maintenance, inspection, and compliance provisions under the new amendments.

- As a component of the revisions to the Nutrient Credit Exchange law proposed in 2012, allow for increased loads from onsite/septic to be aggregated at a jurisdictional level and available for offsets.
  - Meetings have occurred with stakeholders on possible modifications of the Nutrient Credit Exchange law that would allow the onsite sector to trade. There are a number of legal and administrative issues to address. Current discussion has mainly addressed the newly installed systems. Existing systems that do not currently have nitrogen reduction capability represent the majority of the existing load.
- A number of suggested revisions to the Code of Virginia were offered in this section as ways to gain additional nitrogen reductions that are currently outside the state's authority to implement. Suggestions included:
  - Require all new and replacement systems in the Chesapeake Bay watershed to utilize either (1) "shallow placed" systems capable of reducing nitrogen loss or (2) denitrification technology to reduce nitrogen loss and consider requirements for additional nitrogen reducing technologies in certain defined sensitive areas
  - Promote the use of community onsite systems which provide a greater reduction of total nitrogen
  - Establish five year pumpout requirements for septic tanks in jurisdictions within Virginia's Chesapeake Bay watershed (this mirrors the existing requirement for septic tanks within Chesapeake Bay Preservation Act areas)
  - Establish tax credits for upgrade/replacement of existing conventional systems with nitrogen reducing systems
  - Encourage the use of currently authorized "Betterment Loans" for repairs to existing systems and explore other financial incentives or relief to encourage the upgrade of existing systems especially for low and moderate income households

No legislative proposals have been introduced at this time to implement any of the proposed revisions. Determining when such legislative proposals might be advanced depends on many factors which include the health of Virginia's economy and the availability of federal assistance. Establishing a timetable for legislation is not feasible at this time.

7.1.2 Phase II Local Strategies

The onsite sector information was included in the outreach package to the planning districts and local governments. The information included the number of onsite systems, the number of septic BMPs reported for 2009 and the level of BMP implementation needed according to the Phase I WIP by 2025 in the localities. The intention is for the localities to verify the data, identify any errors, and report locally preferred implementation scenarios, strategies, and resource needs. Additionally, VDH is working on identifying which alternative system designs should be counted as nitrogen reducing technologies. This information will be shared with the local health departments and localities so that these systems can be identified and accurate reporting of nitrogen reducing systems to EPA can begin.

Local strategies will be developed as part of the ongoing Phase II planning process. Strategies submitted by local stakeholders will be summarized in this section of Virginia's final Phase II WIP.

7.2 Contingencies

Should the amendments to the regulation not become effective and VDH loses the ability to regulate nitrogen from alternative systems, the burden will fall to localities to implement a nitrogen reduction program that accounts for the impact from the onsite sector. Modifications to the nutrient trading law may facilitate this if the law allows localities to trade to offset the local onsite load.

7.3 Tracking and Reporting Protocols

VDH will continue to refine its Virginia Environmental Information System (VENIS) database to identify nitrogen reducing installations and report them to EPA. A first report of systems that comply with the 50 percent reduction requirement will be delivered by December 31, 2011. The first report will identify NSF 245 treatment units, or the equivalent, that have been tested to demonstrate a 50 percent nitrogen removal for small systems.

VDH will continue to operate and expand the online reporting capabilities of VENIS to enable licensed operators to report operation and maintenance activities directly, including pumpouts for all systems, not just alternative systems. VDH will also work with DCR and local governments to more fully capture and report the number of pumpouts and connections. DCR currently tracks pumpout practices associated with small watershed TMDL implementation grants through the cost share program. DCR also reports on the pumpout progress for all Bay Act localities. At this time, all existing data is submitted to EPA's NEIEN by DCR. However, greater coordination is needed between VDH and DCR to capture additional BMPs not currently tracked by DCR.

SECTION 8. FOREST LANDS

Virginia's WIP values afforestation, establishing new forest on open land, as a BMP that achieves water quality improvement principally through the establishment of riparian forest buffers and afforestation of marginal agricultural lands. Afforestation should meet the criteria for inclusion as a BMP. New forests provide additional nutrient load reduction services that were not present in a watershed prior to project implementation. However, existing forestland is not currently credited for water quality protection in the WIP. Even as new forests are created through BMPs implemented pursuant to the WIP, Virginia continues to experience a net loss of

approximately 16,000 acres of forestland per year, based on a rolling ten year average, according to Forest Inventory Analysis (FIA). This forestland loss impacts nutrient and sediment loads and overwhelms the ability of afforestation to keep pace with nutrient and sediment load reduction targets on a landscape scale. Developing strategies that influence the rate of forestland conversion is of great importance in the context of protecting water quality over the long term.

With the obligation to meet nutrient and sediment loads contained in the Chesapeake Bay TMDL, Virginia has an opportunity to incorporate into the Phase II WIP, strategies to slow or reverse the loss of forestland and the associated water quality benefits. Such strategies would recognize the direct value that forests provide for water quality, with such ancillary benefits as water infiltration and storage, biodiversity, carbon sequestration, air quality, pollination, and others.

With the Governor's focus on land conservation and the benefits of forest preservation and afforestation to the water quality goals of the WIP, Virginia will examine WIP strategies that not only will result in nutrient and sediment reductions but will also maintain forest cover that protects water quality over the long term.

Possible strategies related to forest conservation and afforestation includes the following:

- Forest conversion for the purposes of developing municipal infrastructure (power lines, highways, government buildings, etc.) or forest conversion on government owned land may represent opportunities to offset forestland conversion. Currently, the Virginia Department of Forestry (VDOF) is developing a Forest Valuation Instrument to provide the necessary metrics and valuation in order to assess losses due to forest conversion including not only fiber (sawtimber, pulpwood), but also including an estimate of gain/loss in forest ecosystem service provisions including water quality and quantity (flood attenuation, precipitation retention and groundwater recharge, nutrient cycling and retention), flora and fauna diversity, carbon sequestration, aesthetic, and community social values. The Forest Valuation Instrument will be leveraged in the effort to offset forestland loss
- Municipal infrastructure is being developed for societal benefits and it stands to reason that losses of environmental benefits and services caused by forest conversion merits consideration. Other opportunities for consideration as a driver to control forest conversion might be corporate stewardship and maintaining green infrastructure and so-called "green" development (minimizing forest loss)
- In addition to offsetting conversion of working forests, there exists the opportunity to include strategies in urban and suburban areas that impact tree canopy and urban forest cover. Several localities in Virginia have strong tree preservation ordinances that value the environmental benefits associated with tree cover. Gaining recognition in the model for an urban locality's effort to preserve, enhance, and maintain the urban tree canopy is critically important. Strategies in the action plan to manage conservation of urban tree canopy and retention of urban forest cover could include identification of priority areas for retention, setting percent forest cover retained guidelines for development, and replanting cleared areas. Priority areas for retention would include flood plains, intermittent and perennial streams, steep slopes, and critical habitats. An urban and community forest retention strategy will reduce the rate of tree canopy and urban forestland loss as population growth increases.

8.1 Phase II Strategies

Create a forest conversion workgroup to develop an "action plan" with the objective of developing strategies for incorporation into the Phase II WIP that offset the impacts of forestland conversion to more intensive land uses by January 1, 2012.

Work with EPA, Bay jurisdictions and others to determine the feasibility of achieving credited TMDL nutrient or sediment reductions from conserving existing forestland in the context of the Chesapeake Bay model and if successful, establish future TMDL milestones.

8.1.1 Impacts to Phase I Strategies

In addition to the Phase I WIP commitments of increased effective BMP implementation on logging operations and continued logger education, developing strategies that influence the rate of forestland conversion is of great importance for protecting water quality over the long term.

8.1.2 Phase II Local Strategies

The forest sector information was included in the outreach package to the planning districts and local governments. The information included the model's land use acres, the number of forest BMPs reported for 2009 and the level of BMP implementation needed according to the Phase I WIP by 2025 in the localities. The intention is for the localities to verify the data, identify any errors, and report locally preferred implementation scenarios, strategies and resource needs.

Local strategies will be developed as part of the ongoing Phase II planning process. Strategies submitted by local stakeholders will be summarized in this section of Virginia's final Phase II WIP.

8.2 Contingencies

No contingencies are necessary or anticipated.

8.3 Tracking and Reporting Protocols

DOF currently has a system in place to monitor BMP implementation as well as compliance with the Commonwealth's Silvicultural Water Quality Law. The data is kept in a spreadsheet, which is not conducive to the large amount of data analysis needed. Existing data needs to be exported into a database for easier data analysis and report generation. The DOF currently has mobile data collection capability, which needs to be increased to capture the information required of the BMP monitoring effort.

Reporting should be done using the format that currently supports data collection for BMP implementation. This presents an opportunity to develop a statewide reporting system that could be expanded to collect relevant data from all the sectors.

An annual report is compiled by DOF and is available on our website or by request. It is anticipated that a five year report will also be developed and published for public consumption. This report, or portions of it, could be submitted to EPA or combined with information from the other nonpoint source sectors into a single report for EPA.

SECTION 9. RESOURCE EXTRACTION

9.1 Phase II Strategies

The Virginia Department of Mines, Minerals and Energy (DMME) will continue to seek funding and partnership opportunities to increase the restoration of orphaned mineral mines (Orphaned Lands Program (OLP) sites) focusing on locations where other pollution impairments exist and implementation plans are in place. An Advisory Committee prioritizes OLP site restoration based on their location within high priority watersheds and the likelihood of funding through both private and governmental cost-share and tax credit programs. Partnerships with the Virginia Department of Game and Inland Fisheries and DOF can be useful in restoring OLP sites, as two of the conversions are to wildlife habitat (quail) and successional forest.

DMME will work closely with local governments to raise awareness and understanding of the nature and value of their geologic resources. This may be accomplished by improving resource documentation in locality comprehensive plans, increasing the local knowledge base, and improving the decision making process through greater understanding of the impacts of mining activities on water resources.

9.1.1 Impacts to Phase I Strategies

Operators of active mines and well sites are required by state law to implement management practices that control the release of sediment from the site and require compliance with current state and federal effluent standards for point source discharges. These requirements are documented in the Phase I WIP. Before receiving a permit to disturb a site, all erosion and sedimentation controls must be in place, with regular monitoring during the active mining phase. Reclamation plans might include stabilizing the site, planting pasture and trees, and stream restoration which may result in decreased sediment loads.

9.1.2 Phase II Local Strategies

DMME will continue to evaluate opportunities to restore OLP sites. Working with landowners to restore these sites requires extensive partnerships, research, evaluation and diverse funding. DMME will also evaluate new coordination opportunities with local governments to better understand their geologic resources and the BMPs used to protect water resources in their vicinity.

The surface mining sector information was included in the outreach package to the planning districts and local governments. The information included the model's land use acres, the number of resource extraction BMPs reported for 2009, and the level of BMP implementation needed according to the Phase I WIP by 2025 in the localities. The intention is for the localities to verify the data, identify any errors, and report locally preferred implementation scenarios, strategies, and resource needs.

Local strategies will be developed as part of the ongoing Phase II planning process. Strategies submitted by local stakeholders will be summarized in this section of Virginia's final Phase II WIP.

9.2 Contingencies

Increasing the number of inspectors, reclamation sites, and stream restorations may contribute to reductions of sediment across the Bay watershed.

9.3 Tracking and Reporting Protocols

Tracking the compliance of VPDES general permit holders is currently done by DEQ, while DMME tracks compliance with their own permit holders. Periodically, the facilities are inspected to ensure compliance with their permit conditions. Facilities must report on a regular basis and show their schedules for reclamation of disturbed sites. As resources are available, an expansion in the reclamation of older abandoned sites could be pursued to include stream restoration and site stabilization. These reclamation opportunities and their progress would be tracked by DMME and the progress supplied for each Bay TMDL milestone reporting period. Currently, DMME is developing an inventory of abandoned mines and reclamation work that is being driven by local TMDL's.

SECTION 10. FEDERAL FACILITIES

10.1 Phase II Strategies

The Commonwealth will utilize MS4 permits to ensure BMP implementation on existing developed regulated federal lands to achieve nutrient and sediment reductions equivalent to Level 3 scoping run reductions by 2025. Level 3 implementation equates to an average reduction of 18 percent of nitrogen loads, 32 percent of phosphorus loads and 40 percent of sediment loads from impervious regulated acres and 12 percent of nitrogen loads, 14.50 percent of phosphorus loads and 17.5 percent of sediment loads for pervious regulated acreage. These reductions are beyond urban nutrient management reductions for pervious regulated acreage.

10.1.1 Impacts to Phase I Strategies

10.1.2 Phase II Local Strategies

The federal lands sector information was included in the outreach package to the planning districts and local governments. The information included the model's land use acres, the number of BMPs reported for 2009, and the level of BMP implementation needed according to the Phase I WIP by 2025. The intention is for the federal land holders to verify the data, identify any errors, and report preferred implementation scenarios, strategies, and resource needs.

Federal strategies will be developed as part of the ongoing Phase II planning process. Strategies submitted by federal facility stakeholders will be summarized in this section.

10.2 Contingencies

Consistent with Presidential Executive Order 13508 and the Energy Independence and Security Act, the Commonwealth will expect that all federal facilities control the discharge of pollutants in stormwater to the maximum extent practicable and any more stringent requirements necessary to meet water quality requirements of the Federal Water Pollution Control Act. Pursuant to federal guidance, 40 C.F.R. section 122.26(d)(2) and 40 C.F.R. section 122.34(b)(5), federal facilities will be required to manage post construction stormwater on new and redeveloped sites

to preserve and restore site hydrology and implement BMPs necessary to control the discharge of pollutants in stormwater to the maximum extent practicable. Additionally, any more stringent requirements necessary to meet water quality requirements of the Federal Water Pollution Control Act and attain water quality standards must also be achieved.

10.3 Tracking and Reporting Protocols

Additional coordination is needed to improve the tracking and reporting of BMP implementation on federal facilities. While it is important for the federal actions to be communicated to the local governments adjacent to the federal facilities and the state, direct reporting of federal implementation actions through the NEIEN should be explored.